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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/778,661	02/06/2001	Glenn H. Rankin	10003011-1	5477

7590

09/08/2003

AGILENT TECHNOLOGIES
Legal Department, 51U-PD
Intellectual Property Administration
P.O. Box 58043
Santa Clara, CA 95052-8043

EXAMINER

AMARI, ALESSANDRO V

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 09/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/778,661

Applicant(s)

RANKIN ET AL.

Examiner

Alessandro V. Amari

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-- **Th MAILING DATE of this communication app ars on th cover sh et with the correspondence address --**

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-8, 10-16, 19-23, 25-32 and 34-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-8, 10-16, 19-23, 25-32 and 34-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>9</u> . | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11 July 2003 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 2-8, 10-16, 19-23, 25-32 and 34-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Lear US Patent 5,633,527.

In regard to claims 2, 10, 25 and 34, Lear discloses (see Figure 8) a vertical cavity surface emitting laser or vertical semiconductor optical filter, including a first non-concave reflector (64) positioned at a first end of the optical cavity, the reflector being configured to focus light that reflects off the reflector back in an opposite direction to avoid diffraction losses from the optical cavity, the first non-concave reflector including an outer layer of material (44) that emulates a concave mirror; and a second non-concave reflector (62) positioned at a second end of the optical cavity that receives and reflects

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light reflected from the first non-concave reflector as described in column 20, lines 24-67 and column 21, lines 1-14.

Regarding claims 3, 11, 26 and 35, Lear discloses (see Figure 8) that the outer layer includes a substantially convex, outer surface (14) having a thickness that varies as a function of radial distance out from an axial center of the outer layer and wherein the thickness provides a phase delay that varies as a function of a distance from the axial center of the outer layer as described in column 20, lines 24-67 and column 21, lines 1-14. Although, the prior art does not specifically disclose a phase delay, this feature is seen to be an inherent teaching of that element since the varying thickness of the outer surface will provide a phase delay for the light.

Regarding claims 4, 12, 27 and 36, Lear discloses (see Figure 8) that the first non-concave reflector includes an outer layer of material (28) that has an index of refraction that varies as a function of radial distance out from an axial center of the outer layer as described in column 20, lines 24-67 and column 21, lines 1-14.

Regarding claims 5, 13, 28 and 37, Lear discloses that the outer layer is substantially planar as shown in Figure 8.

Regarding claim 6, 14, 29 and 38, Lear discloses that the reflectors include a plurality of material layers oriented in a stacked arrangement as shown in Figure 8 and as described in column 20, lines 24-28.

Regarding claim 7, 15, 30 and 39, Lear discloses that the material layers have different indices of refraction than adjacent material layers as described in column 16, lines 29-46.

Regarding claim 8, 16, 31 and 40, Lear discloses that the material layers have quarter wave optical thicknesses as described in column 16, lines 29-46.

Regarding claims 23 and 32, Lear further discloses (see Figure 8) a semiconductor substrate (12) upon which the laser is formed, the optical cavity being positioned perpendicular to the semiconductor substrate; and wherein the laser emits light in a direction perpendicular to the semiconductor substrate as shown in Figure 8.

In regard to claim 19, Lear discloses (see Figure 8) a vertical cavity surface emitting laser, comprising an optical cavity, including: a first reflector (64) positioned at a first end of the optical cavity, the first reflector including a layer of material (14, 28) that has an index of refraction that varies as a function of radial distance out from an axial center of the layer such that the first reflector is configured to focus light that reflects off the first reflector to avoid diffraction losses from the optical cavity and a second reflector (62) positioned at a second end of the optical cavity that receives and reflects light reflected from the first reflector as shown in Figure 8 and as described in column 20, lines 24-67 and column 21, lines 1-14.

Regarding claim 20, Lear discloses that the outer layer is substantially planar as shown in Figure 8.

In regard to claim 21, Lear discloses (see Figure 8) a method for manipulating light in a vertical cavity surface emitting laser, comprising: reflecting light between two reflectors (62, 64) of an optical cavity of the laser; and focusing the light with a layer of material (14, 28) having a thickness that varies as a function of radial distance out from

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an axial center of the layer to reduce diffraction losses as described in column 20, lines 24-67 and column 21, lines 1-14.

In regard to claim 22, Lear discloses (see Figure 8) a method for manipulating light in a vertical cavity surface emitting laser, comprising: reflecting light between two reflectors (62, 64) of an optical cavity of the laser; and focusing the light with a layer of material (14, 28) having an index of refraction that varies as a function of radial distance out from an axial center of the layer to reduce diffraction losses as described column 20, lines 24-67 and column 21, lines 1-14.

In regard to claim 41, Lear discloses (see Figure 8) a method for manipulating light in a vertical semiconductor optical filter, comprising reflecting light between two reflectors (62, 64) of an optical cavity of the optical filter and focusing the light with a layer of material (14, 28) having a thickness that varies as a function of radial distance out from an axial center of the layer to reduce diffraction losses as shown in Figure 8 and as described in column 20, lines 24-67 and column 21, lines 1-14.

Response to Arguments

4. The Applicant asserted that all rejections have been traversed, rendered moot and or accommodated and that the claims pending in the application are in condition for allowance and presented no arguments in response to the prior art applied.

In response, the Examiner would like to point out that the lack of Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of

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the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alessandro V. Amari whose telephone number is (703) 306-0533. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (703) 305-0024. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ava *ava*
28 August 2003


MARK A. ROBINSON
PRIMARY EXAMINER